

1           THE EMBODIMENTS OF THE INVENTION FOR WHICH AN  
2 EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS  
3 FOLLOWS:

4           1. A method for cross-resource sharing of a limited number of serially  
5 accessible devices which are physically connected in a complex of MVS images,  
6 comprising the steps of:

7           a) providing a control database shared by all MVS images in the  
8 complex;

9           b) periodically monitoring the control database for devices which  
10 have been allocated and by which image;

11           c) intercepting a device allocation request from a MVS image;

12           d) performing a request/release operation on the control database to  
13 determine if a device or devices satisfy the request;

14           e) granting allocation of the available devices in the control database  
15 to the requesting MVS image if the request is satisfied;

16           f) updating the control database for flagging an allocated device or  
17 devices as being unavailable, regardless of which image made the allocation; and

18           g) releasing the control database.

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1                   2. The method of claim 1 wherein each MVS image periodically  
2 performs a request/release on the control database so that

3                   a) if the requesting MVS image has an unsatisfied allocation request  
4 in a queue; and

5                   b) if a device or devices are available, then the image enters  
6 allocation recovery for re-driving the queued allocation request

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8                   3. The method of claim 1 wherein the control database is stored on a  
9 shared dasd.

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11                   4. The method of claim 1 wherein the control database is accessed  
12 through a TCP/IP network interface.

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14                   5. The method of claim 4 wherein a local control database is  
15 associated with, and maintained for access by, each MVS image through the  
16 TCP/IP network interface, one of which is maintained as a master with veto over the  
17 other control databases.

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1                   6. The method of claim 1 further comprising:  
2                   a) providing a software extension for detecting device allocation  
3 requests; and  
4                   b) accessing the software extension for intercepting device allocation  
5 requests.

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7                   7. The method of claim 1 wherein the operating system is version  
8 MVS/ESA 5.2 or a higher operating system further comprising intercepting device  
9 allocation requests at a subsystem interface hook.

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11                   8. The method of claim 7 wherein the hook is subsystem interface  
12 function call 78.

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14                   9. The method of claim 1 wherein the operating system is OS/390.

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16                   10. The method of claim 1 wherein the shared control database is  
17 located on a low activity dasd for minimizing delays in request/release operations.

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1                    11. The method of claim 1 further comprising monitoring of the event  
2 notification of a change in devices and adjusting the logical allocations in the control  
3 database accordingly.

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5                    12. A system for cross-resource sharing of a serially accessible device  
6 or devices which are physically connected in a complex of MVS systems  
7 comprising:

8                    a) a shared control database;

9                    b) means for request/release updating operations on the control  
10 database for flagging which device or devices are unavailable as having been  
11 allocated by an MVS system and which MVS system allocated the device or  
12 devices; and

13                    c) means for intercepting a device allocation request and which MVS  
14 system made the request and using the request/release means for determining if  
15 the request can be satisfied from the available device or devices and if so,  
16 satisfying the requests and flagging the allocated devices as unavailable to any  
17 MVS system and updating the control database accordingly.

18

1 13. The system of claim 12 wherein

2 a) the MVS systems are operating under MVS/ESA 5.2 or a higher  
3 operating system which has subsystem interface; and

4 b) the means for intercepting a device allocation request is through  
5 the subsystem interface.

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7 14. The system of claim 13 wherein the subsystem interface is  
8 function call 78.

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10 15. The system of claim 12 wherein the shared control database is  
11 located on a DASD.

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13 16. The system of claim 12 wherein the shared control database  
14 access is through a TCP/IP network.

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16 17. The system of claim 12 wherein the control database further  
17 comprises means for flagging a device or devices as available or unavailable due to  
18 an unallocation or allocation and which MVS system allocated the device or  
19 devices.

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- 1 18. The system of claim 13 wherein the means for request/release
- 2 updating operations comprises subsystem software.

18. The system of claim 13 wherein the means for request/release updating operations comprises subsystem software.